EXHIBIT K

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Noah W. Drew, Esq.
THE SPENCE LAW FIRM
15 S. Jackson St.,
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RE: Lunneen v. Berrien County
Decedent: Jack Lunneen
Date of Death: October 22, 2018
Date of Birth: May 16, 1967
Date of Incident- 10/22/2018

Dear Attorney Drew:

I am a board-certified cardiologist with substantial experience in sudden cardiac arrest and sudden cardiac death, including my service as the director of the ICU and CCU at Providence- St. John's Hospital in Santa Monica, CA, and in my current position as Section Chief of Cardiology at Providence-St. John's.

I am knowledgeable about peer-reviewed medical and scientific research on the topics of pathophysiology of cardiac arrest. The knowledge base that I utilize has been formed by my 35 years of clinical practice and experience, and my previous and ongoing review of and experimental literature.

In November 2021, I was retained as an expert to review relevant materials and provide expert opinion on this matter, date of incident, 10/22/2018, and to consider and to render expert opinion on whether the restraining process was contributory to Mr. Jack Lunneen's death, and to address alternative opinions and theories regarding the cause of death.

MATERIALS REVIEWED:

1. Plaintiff's Produced Documents
o 000001-000004 Berrien County Sheriff's Dept. Report
o 000005-000009 Berrien Springs-Oronoko Twp Incident Report
o 000010-000012 Statement of Berrien Springs Officer James N. Wyss
o 000013-000014 BC Sherriff's Dept Report from St. Roger Johnson
o 000015-000017 MI State Police Incident Report - Shane Criger
o 000018-000042 MI State Police Incident Report – Patrol

o 000043-000045 Tazer Pulse Logs
o 000046-000047 Lunneen - Berrien County Medical Examiner Report
o 000048-000049 Officer Wyss-Administrative Leave Letters
o 000050 Lunneen - BC Prosecutor's Memo to Officers
000051-000053 Denial of Criminal Charges from Prosecutor
o 000054-000083 Automated incident capture system incident property report, Incident No. 050-0000338-18
o 000084-000098 WMU Autopsy Report
o 000099-000106 Axis Toxicology Report
o 000107-000133 Spectrum Laboratory Reports
o 000134-000137 Call for Service Report
o 000138 Jim Wyss Body Camera
o 000139 Roger Johnson Body Camera Interaction
o 000140 Unidentified officer body cam video
o 000141 9-1-1 call
o 000142-001311 Jack Lunneen - Medical Records
o 001312 Jack Clement Lunneen Drivers License Older One from Thomas Lunneen_Redacted
2. Michigan State Police Subpoena Production
o Bates BC0057 - 18-12118_Johnson_No_LEIN
o Bates BC0058 - 101_W_UNION_Vankampen 1_No_LEIN
o Bates BC0059 - 101_W_UNION_Vankampen 2_No_LEIN
o Bates BC0060 - Cass_near_Madison_Berrien_Springs_Village_Phillips_No_LEIN
o Bates BC0061 - OLD_US_31_5TH_3RD_BANK_Hahn_No_LEIN
o BCSD File - Lunneen - Bates BC0001 - BC00313 (01033068x7A44A)
3. Enhanced Videos from Expert
o 000138 Jim Wyss Body Camera V4-A4
o 000139 Roger Johnson Body Camera Interaction V4
o 210528-Unidentified - 4th Camera
o 210528-Unidentified Footage 4V-3A-C
o Lunneen Timeline Wyss - Johnson SBS_v2_JW-Audio-v4 (1)
o Lunneen Timeline Wyss - Johnson SBS_v2_JW-Audio-v4
o Lunneen Timeline Wyss - Johnson SBS_v4_Split_Audio-v5
o Lunneen Timeline Wyss - Johnson SBS_v4_Split_Audio-v5.m4v.crdownload
4. Filings
o 2020.10.21 Complaint
o 19. 2021.03.11 Case Management Order
o 48. 2021.10.06 Order Granting Expert Designation Extension
5. Depositions
o 2021.08.24 Roger Johnson
Exhibits 1-4
RogerJohnson_COND
o 2021.08.24 Wyss
Exhibit 5
JamesWyss_COND
6. autopsy photos

7. deposition transcript of the medical examiner, Dr. Elizabeth Douglas, as well as exhibits.
8. Dr. Michael Freeman-expert report

PERTINENT MEDICAL HISTORY:

In the early morning hours of October 22, 2018, Berrien County Sheriff's Department Officer Roger Johnson and Berrien Springs-Oronoko Township Police Department's Officer James Wyss responded to a dispatch. Around 1:23 a.m., a woman in Berrien Springs called 9-1-1 to report that a man had been circling her home, yelling for help. According to the woman, the man had pushed her air conditioning unit through her window. The suspect was later identified as Jack Lunneen.

Sergeant Johnson found Mr. Lunneen, who was shirtless, despite the cold weather, and who "did not appear to be making sense," and radioed for medical assistance, concerned about his inappropriate attire for the weather, which was around 35ºF, and the fact that the man was sweating.
Officer Wyss and Sgt. Johnson gave verbal commands to Mr. Lunneen to get on his knees, but this order was not followed. Sgt. Johnson then fired his TASER weapon at Mr. Lunneen, making good contact with his torso, and issued a 5-second shock at 01:47:06. Bodycam video and audio from Officer Wyss show Mr. Lunneen doubled over in pain and making grunting sounds, before running in the opposite direction. (Officer Wyss bodycam footage, time: 17:56).
The officers forced Mr. Lunneen to the ground, where he fell on his side, but he continued to struggle with the officers. Sgt. Johnson used his bodyweight to restrain Mr. Lunneen's body, instructing him to turn to a prone position, so that handcuffs could be applied. An image from Officer Wyss' body camera shows Sgt. Johnson applying his body to hold down Mr. Lunneen. (Officer Wyss bodycam footage, time: 20:34).
As the officers attempted to handcuff Mr. Lunneen while applying weight to his back and head, he continued to struggle against the restraint. His grunting sounds become softer and shorter, and the last sound heard was approximately 20 seconds before he was fully handcuffed, and about 2 minutes after he was initially taken to the ground. (Officer Wyss bodycam footage, time: 20:46) When one handcuff had been successfully applied, Mr. Lunneen had stopped moving. Both officers dismounted from Mr. Lunneen's torso before the second handcuff was applied.
Sgt. Johnson contacted the dispatcher to expedite the medical transport, reporting, "He's having trouble breathing." Sgt. Johnson moved Mr. Lunneen's shoulder from side to side and said, "Hey wake up," but Mr. Lunneen remained unresponsive and motionless.
The officers allowed the immobile and unresponsive Mr. Lunneen to remain in the prone position, handcuffed, and shirtless, on the pavement, as they waited for the ambulance to arrive, for nearly 3 minutes after he had stopped moving.
When the paramedic arrived on scene, Sgt. Johnson reported that Mr. Lunneen was unresponsive. The paramedic discovered that Mr. Lunneen had no pulse and was not breathing.
The paramedic asked the officers to remove Mr. Lunneen's handcuffs and move him to the supine position, as he set up a LUCAS mechanical CPR machine. It took 4 minutes from the time the paramedic arrived until the LUCAS was functioning. Approximately seven minutes and sixteen seconds elapsed from the time Mr. Lunneen became unresponsive to the time of the paramedic initiating CPR interventions.
Following unsuccessful resuscitation measures at the scene, Mr. Lunneen was transported to Lakeland Medical Center Emergency Room, St. Joseph, Michigan, where he was pronounced dead at 2:30 a.m. on 10/22/2018.

The Emergency Room physician's note at Lakeland stated the following:
"51-year-old male presenting to the ED in cardiac arrest. Patient was apparently breaking into someone's house tonight and police were called to the scene. They report that they were trying to apprehend the patient when he became violent and started to run. They were able to get a hold of him and that he tried to swing at one of the officers and was tased. He fought with the police for a short time after this and they wrestled him to the ground. At some point he stopped responding. EMS was called and reports asystole on first rhythm check. He had PEA on a subsequent check. They thought one point in the ambulance he may have had ventricular fibrillation and defibrillated him at 200 J. He has received 6 rounds of epi and 2 rounds of bicarbonate upon arrival to the ED. He is on the Lucas device".

AUTOPSY REPORT:
On October 24 and 25, 2018 an autopsy was conducted by Dr. Douglas.
The external examination revealed multiple blunt force injuries to the head, lips, and extensive contusions and abrasions to the trunk and extremities. He also had conjunctival petechiae (in the eyes).
The internal examination revealed signs of chronic tobacco exposure, including discoloration of of the pleural lung membranes, and anthracosis of the lungs. There was cardiomegaly (heart enlargement, increased heart weight) with heart weight of 550 grams (normal < 400 grams), which a cardiac pathologist attributed to chronic hypertension. There was no evidence of any acute cardiac injury.
The toxicology report demonstrated a positive result for methamphetamine, at 333 ng/mL.
Dr. Douglas concluded that the cause of death was due to
"Excited delirium associated with methamphetamine use".
Dr. Douglas provided the following comments:
"Given the totality of the circumstances, autopsy findings, consultant reports, histology, and toxicology, in my opinion, the cause of death is excited delirium associated with methamphetamine use, and with the decedent's cardiac pathology a contributing factor."
Dr. Douglas also described Mr. Lunneen as "a 51-year-old man with a history of arrhythmias", though there are no clinical records documenting any arrhythmias creating symptoms or requiring treatment.

ANALYSIS & OPINIONS- DANIEL WOHLGELERNTER, MD

It is my opinion, with a reasonable degree of medical certainty, that Jack Lunneen's death was due to restraint/compressive asphyxia with mechanical obstruction of respiration, secondary to compressive force applied to his torso by the police officers with resultant respiratory compromise and subsequent development of hypoxia/hypoxemia causing asystole and PEA cardiac arrest. Asystole and PEA are commonly observed in cardiac arrests associated with asphyxia.

Asystole is also known as flatline. It is a state of cardiac standstill with no cardiac output and no ventricular depolarization. In this case with Mr. Lunneen, the only plausible explanation for the asystole is suffocation/restraint asphyxia related to Mr. Lunneen being restrained in the prone position.

Pulseless electrical activity (PEA), also known as electromechanical dissociation, refers to cardiac arrest in which the electrocardiogram shows a heart rhythm that should produce a pulse, but does not.

As is documented in the cardiology literature, PEA may be caused by many conditions, but its most frequent causes are hypovolemia and hypoxemia. "Hypoxia secondary to respiratory failure is probably the most common cause of PEA, with respiratory insufficiency accompanying 40-50% of PEA cases." emedicine.medscape.com/article/161080-overview#a6-updated 11/20/17.

In reviewing the literature and as confirmed by my extensive experience as a cardiologist, the only plausible and possible cause of PEA cardiac arrest in the case of Jack Lunneen was hypoxia/hypoxemia, secondary to restraint/compressive asphyxia. No other cause of PEA is plausible or relevant in explaining Jack's cardiac arrest .

The sequence of asystole followed by PEA in this case is entirely consistent with restraint asphyxia. EKG signals typically exhibit a dynamic sequence of arrhythmias during asphyxia. Asphyxia-induced cardiac demise begins with bradycardia (slow heart rate), which eventually degenerates to PEA and/or asystole.

Mr. Lunneen was subjected to prone restraint, including force at the head into the pavement sufficient to cause significant contusions and abrasions to both sides of his face and his neck. At autopsy, Dr. Douglas noted and documented petechiae in the conjunctiva of both of Mr. Lunneen's eyes. Petechiae are small hemorrhages which indicate mechanical obstruction of venous blood flow from the head, and associated restriction of respiration. When petechiae are found in the white (sclera) and conjunctiva of the eyes, they are most often associated with asphyxia, and strangulation.
Mr. Lunneen had respiratory compromise resulting in hypoxia and ultimately leading to asystole and PEA cardiac arrest. His respiratory compromise was due to compressive/restraint asphyxia produced by Mr. Lunneen being in the prone position on a hard surface, with two officers restraining him in the prone position. In cases of compression asphyxia, the physical act of ventilation is impaired or prevented by compression due to an external force on the chest and/or abdomen. Jack had external force applied to his back by the officers and had external force applied to his chest and abdomen by the unyielding hard surface at the location where he was restrained ;

I reject the contention that a major contributing factor to the sudden cardiac arrest in this matter was methamphetamine intoxication. The undeniable fact that the cardiac rhythms at the time the EMS confirmed cardiac arrest were asystole and PEA is incompatible with the theory that methamphetamine was the culprit. The hypothesis that methamphetamine caused the cardiac arrest would only be

plausible if the cardiac monitor that confirmed this cardiac arrest showed ventricular tachycardia or ventricular fibrillation. Methamphetamine, even at lethal levels of intoxication, does NOT cause asystole or PEA. The only acceptable pathophysiologic explanation of the asystole and PEA in this case is hypoxia/hypoxemia due to asphyxia.

Methamphetamine does create a physiologic derangement in which the individual who has consumed the methamphetamine now has higher oxygen demand, because of the drug-induced hyperactivity, agitation, and circulatory stimulation with higher blood pressure and heart rate. Jack Lunneen suffered cardiac arrest during prone restraint because his breathing was impaired at a time of elevated need for oxygen, and at a time when he needed maximal ventilatory effort to maintain oxygen supply-demand balance and to provide for respiratory compensation for metabolic acidosis. Methamphetamine and the pain produced by Taser application, combined with physical exertion and struggle, contributed to Jack's need for higher levels of oxygen, and possible development of some element of metabolic acidosis. Prone restraint with compressive force to his thorax resulted in the inability of his cardiorespiratory system to maintain oxygen and acid-base balance. The resultant development of hypoxia +/- metabolic acidosis caused his asystole and PEA cardiac arrest.

In addition, I reject the contention that the cardiomegaly noted by the Medical Examiner was a major contributing factor to Mr. Lunneen's cardiac arrest. There was no autopsy evidence of acute or prior myocardial infarction, and the cardiomegaly documented at autopsy was not of sufficient severity to cause sudden cardiac arrest. Moreover, if the cardiomegaly was causative, the EKG rhythm at the time of the cardiac arrest would have been ventricular fibrillation or ventricular tachycardia, and not asystole and PEA, which were documented by the EMS at the time of Jack's cardiac arrest.

In her deposition testimony, Dr. Douglas referred to experimental studies that purported to show that application of compressive force to volunteer subjects placed in the prone position does not cause hypoxia or impairment of ventilation. The studies that she cited do not replicate real-world conditions, in that these studies used healthy volunteers with a known testing endpoint; not a real-life struggle involving a person already in a compromised physiological state with an elevated need for oxygen. The experimental settings in these studies have attempted to reproduce the impact of prone restraint; however, these experiments were performed on healthy volunteers. By contrast, agitated individuals, like Jack Lunneen, are in a state of heightened oxygen demand and may have some element of preexisting metabolic acidosis. Restraint in the prone position may exacerbate these conditions via inadequate ventilation and a decrease in cardiac output. These physiologic derangements can lead to asystole and pulseless electrical activity (PEA) cardiac arrest.

The recently published paper, "Thoracic Weighting of Restrained Subjects", Scientific Reports: 11:15166, 2021, provides data regarding the combined effects of physical exertion, prone positioning, restraint, and body compression (such as occurred with Jack Lunneen). These data demonstrate significant effects on respiration and ventilation as a result of prone restraint in a model of police arrest, and thereby support the theory of restraint asphyxia.

Dr. Douglas concluded that the cause of death was due to
"Excited delirium associated with methamphetamine use".

Excited Delirium is <u>not</u> something that cardiologists recognize as a cause of cardiac arrest. With specific attention to asystole and PEA cardiac arrest, which was the type of cardiac arrest in the case of Jack

Lunneen, there is no mention in any text or journal article that excited delirium can produce this clinical event.

I note that Dr. Douglas is a pathologist, and not a clinician, and has no experience actually taking care of patients, before or after cardiac arrest. We have to look at the clinical history to determine the mechanism of death; the clinical history in this case includes the video evidence, as well as the EKG findings, and laboratory studies. The video demonstrates that Jack Lunneen suffered cardiac arrest during prone restraint because his breathing was impaired at a time of elevated need for oxygen, and at a time when he needed maximal ventilatory effort to maintain oxygen supply-demand balance and to provide for respiratory compensation for metabolic acidosis. Methamphetamine and Taser application, combined with physical exertion and struggle, contributed to Jack's need for higher levels of oxygen, and possible development of some element of metabolic acidosis. Prone restraint with compressive force to his thorax resulted in the inability of his cardiorespiratory system to maintain oxygen and acid-base balance. The resultant development of hypoxia +/- metabolic acidosis caused his asystole and PEA cardiac arrest.

I hereby affirm that the opinions stated above are true and correct within a reasonable degree of medical probability. I also reserve the right to review the reports of other expert witnesses retained in this case by all parties, and review other materials as they become available in the case, and provide additional opinions as appropriate.

Sincerely yours,

Daniel Wohlgelernter

01/17/2022

DANIEL WOHLGELERNTER, MD, FACC